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Ichigaya

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(54) **COOLING CLOTHS**

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This patent is subject to a terminal disclaimer.

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,625,206 A * 12/1971 Charnley 128/846
3,710,395 A * 1/1973 Spano et al. 2/78.1
3,751,727 A * 8/1973 Shepard et al. 2/2.14
3,892,225 A * 7/1975 Twose 126/204
3,950,789 A * 4/1976 Konz et al. 2/93
3,999,220 A * 12/1976 Keltner 2/413
4,024,730 A * 5/1977 Bell et al. 62/259.3

(Continued)

FOREIGN PATENT DOCUMENTS

JP 53-30910 3/1978

(Continued)

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(57) **ABSTRACT**

A cooling suit comprises: a cloth part; at least one spacer provided at a predetermined position of a reverse side of the cloth part, so as to ensure an airflow passage between the cloth part and a wearer's body; an air inlet provided at the cloth part so as to introduce air from the exterior into the airflow passage; an air outlet provided at the cloth part so as to take out the air within the airflow passage; a fan for forcibly causing an airflow within the airflow passage; and a battery for supplying an electric power to the fan.

50 Claims, 14 Drawing Sheets

